FRANKENWEENIE
THE VISUAL COMPANION
SPARKY
Forward by TIM BURTON
Written by MARK SALISBURY

A FILM BY TIM BURTON

FRANKENWEENIE

THE VISUAL COMPANION

MARK SALISBURY

Foreword by TIM BURTON
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Edited by LEAH GALLO and HOLLY C. KEMPF

DISNEY EDITIONS
NEW YORK

MrRZYKRUSKI'S

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FOREWORD

When I first had the concept for *Frankenweenie* in the early '80s, I envisioned it as a stop-motion animated feature. This particular medium has always been a passion of mine. I love the handcrafted feel and how it captures emotion so perfectly. Nonetheless, when Disney offered to do the film as a live-action short, I jumped at seeing the concept realized, even in a different form than originally intended. But in the back of my mind, the project was never complete. Now, almost three decades later, I'm happy I was able to return to it.

In some ways, waiting was better. The field of stop-motion has developed a lot since then. Mackinnon and Saunders have invented some innovative techniques to create puppets with exaggerated and elegant features that allow the tiniest movements. Over the years I've worked with many great people in the stop-motion industry, and I was lucky to have many of them back together on this film. *Frankenweenie* was a labor of love for me. From character to camera to lighting to art direction, I think we've made a film even Dr. Frankenstein would enjoy. Hope you do too.

—Tim Burton

LIGHTNING STRIKES TWICE

THE LABORATORY

Typically, a stop-motion film will begin with a script, from which character designs can be drawn and puppets built. In the case of *Frankenweenie*, Burton had a portfolio of drawings from his original short, mainly of Victor and Sparky but a few other characters too, and a very loose idea of how the story would be expanded. In the summer of 2006, he approached British model makers and puppeteers Mackinnon and Saunders, a Manchester-based firm that had created all the lead puppets and design maquettes for *Corpse Bride*, to build a series of character maquettes based on his original *Frankenweenie* sketches, funding the developments initially with his own money. However, it would be another two years before the project moved on substantially.

By then, Burton was back at Disney, directing a big-screen version of *Alice in Wonderland* that mixed live-action with motion capture and computer animation, and the studio signed on to make a black-and-white, stop-motion 3D feature of *Frankenweenie*. And so, in September 2008, Burton reached out to *Corpse Bride* and *Charlie and the Chocolate Factory* screenwriter John August to begin work on a script. Armed with Burton's initial outline, a list of potential new characters and the same sketches shared with Mackinnon and Saunders, August began to write, delivering his first draft in March 2009.

Around the same time, producer Allison Abbate, an experienced animation veteran who had worked on *The Nightmare Before Christmas* as artistic coordinator and produced *The Iron Giant* and *Corpse Bride*, was finishing work on Wes Anderson's stop-motion feature *Fantastic Mr. Fox* at 3 Mills Studios, in East London, where *Corpse Bride* had been filmed.

Since Burton was in Los Angeles dealing with the visual effects and post-production of *Alice*, the next order of business was to start to create the world and environments in which the story could unfold. Burton called upon his longtime friend and collaborator Rick Heinrichs, who had won an Oscar for his art direction on Burton's *Sleepy Hollow*, to head up a US-based art department and begin conceptualizing the world for this new version.

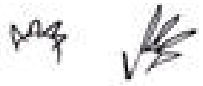
Abbate then began the process of hiring a team of animators and technicians to start work on *Frankenweenie*, triggering storyboards and editorial in September 2009, with filming continuing through to March 2012.

"The opportunity to do another film with Tim was really exciting," says Abbate. "I have always loved the short. It was so clever and beautifully executed, and such a great story. And when Tim said he wanted to make it as a stop-motion feature, it seemed like the perfect marriage of medium and story. I loved the concept of going deeper into the *Frankenstein* story. In the original, when the doctor rejects his creation, he creates a monster. We were going to make a movie about what would happen if the scientist does not reject his creation; what if he loves his creation and he embraces it and protects it? The fact that he creates this beautiful, heroic dog is a really nice twist and was an exciting new avenue for us to explore."

While Burton had sketched out a number of characters for the original *Frankenweenie*, including Sparky, Victor and the poodle with the *Bride of Frankenstein* hairdo, to design the cast for his feature version and, then, to realize those characters in three-dimensional form, he turned to puppet makers Ian Mackinnon and Peter Saunders, who "had done such a great job on *Corpse Bride*."

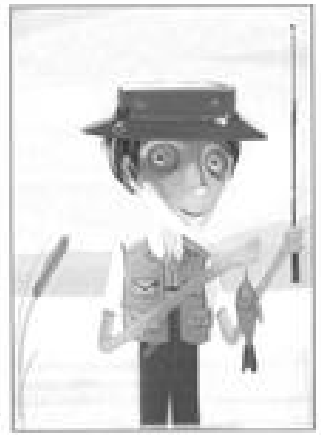
Sheet 2

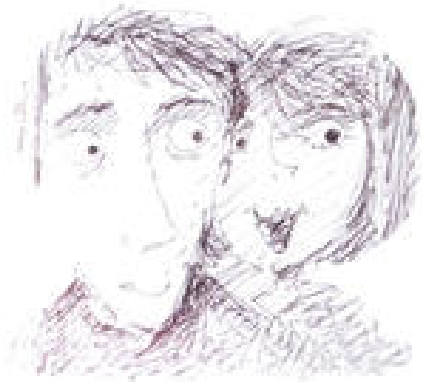
5th March 2010
Tim's ammendments
to Sparky



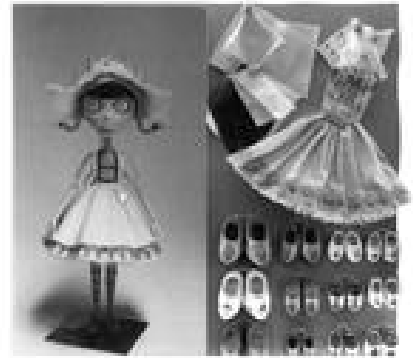
Victors New hands

MR. & MRS. FRANKENSTEIN



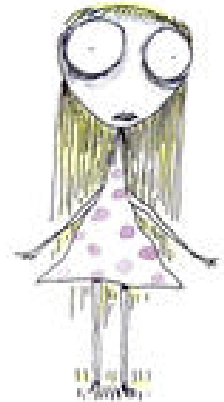


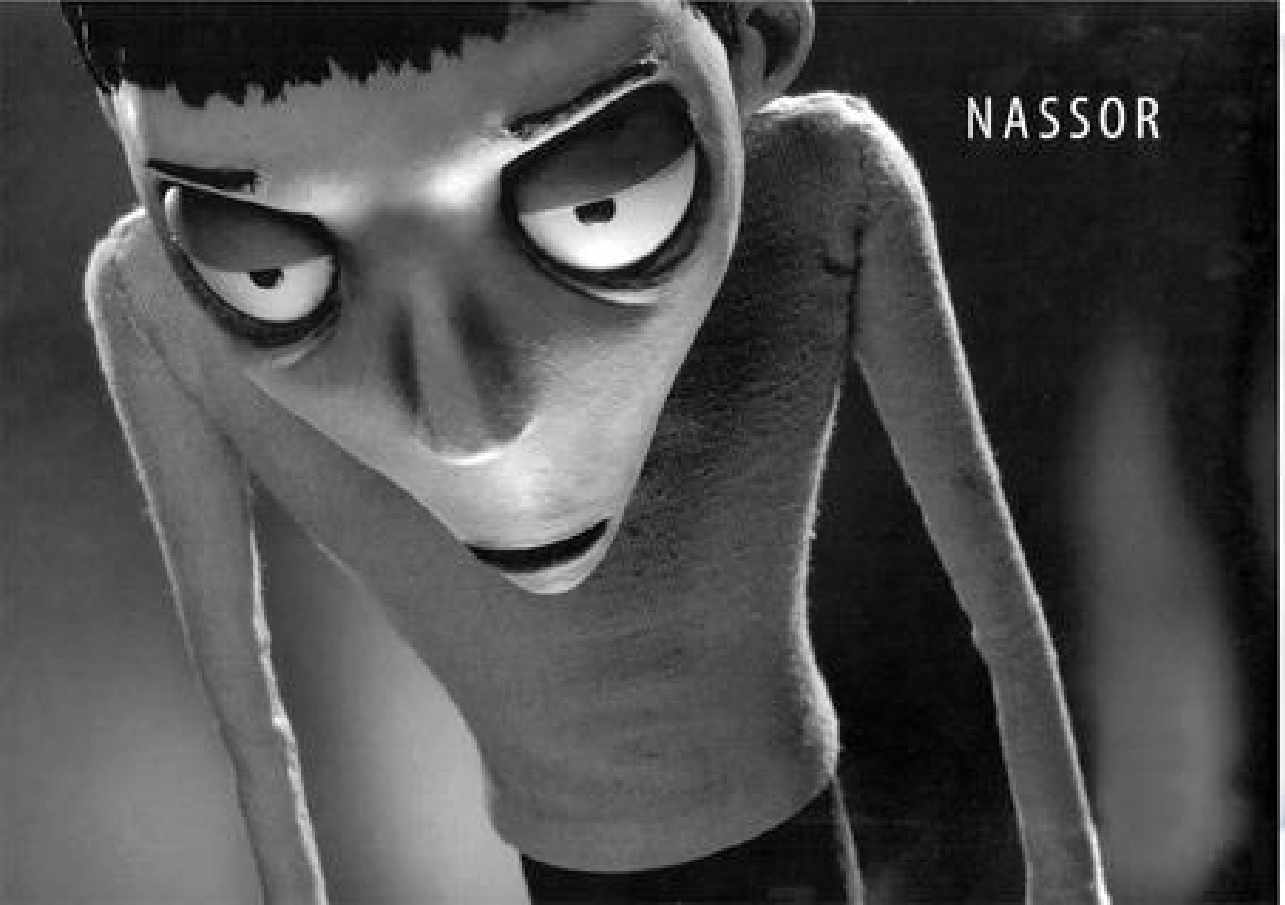
ELSA



PERSEPHONE

WEIRD GIRL





NASSOR

SUGGESTION
19TH MARCH 2010

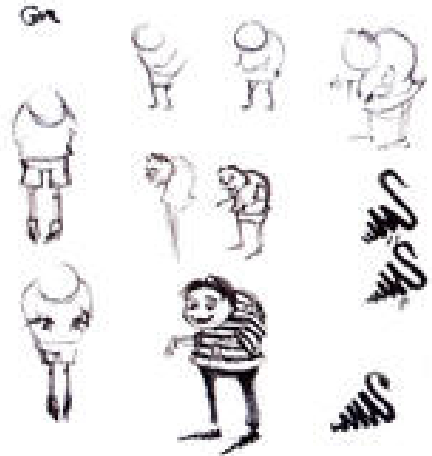
Nassor

* Detail more graphic hairline
* Raised down cheeks
* simplify eyes
* tapering body and legs

Frankenweenie

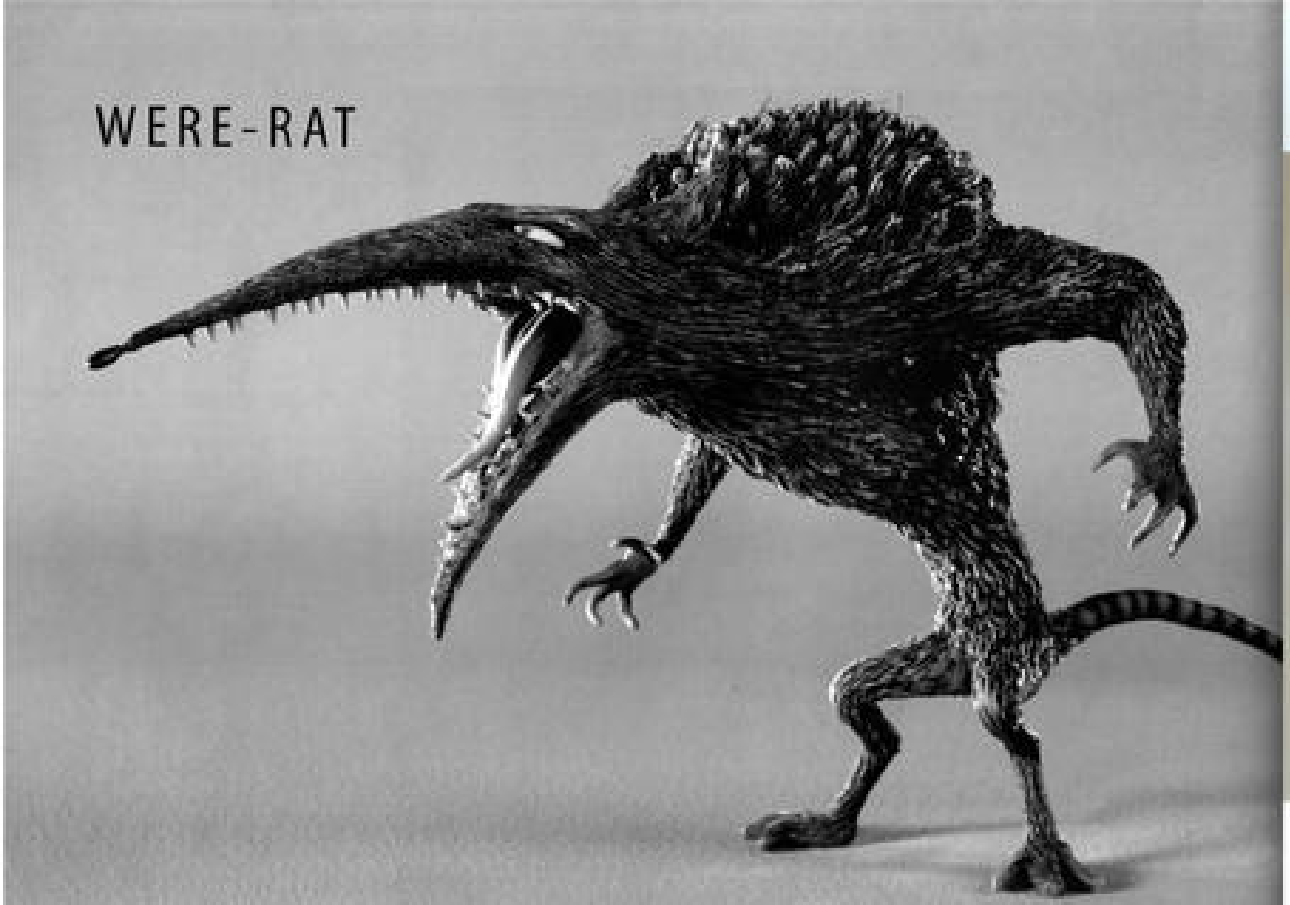
Machinima Studios

EDGAR E GORE



both pages | ink, colored drawing of Edgar by various artists

WERE-RAT



WERE-RAT

TOSHIAKI

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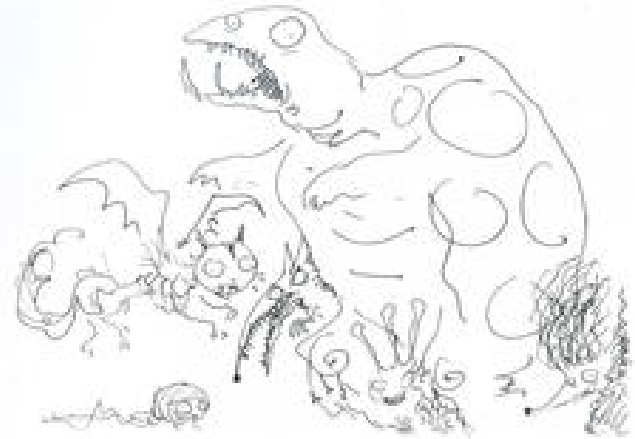
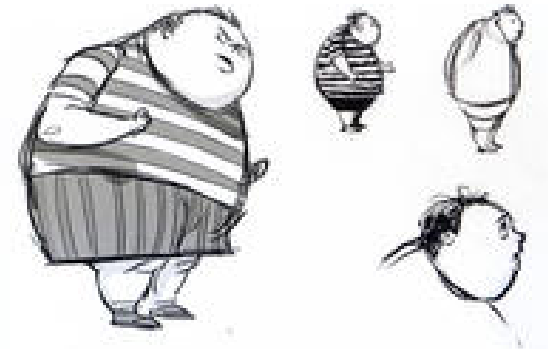
3

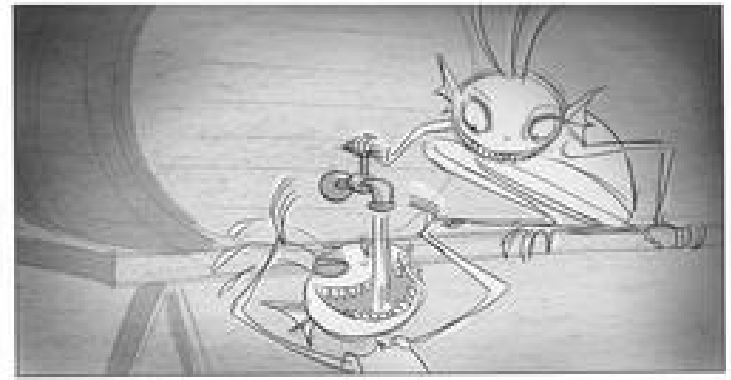
TURTLE MONSTER



BOB

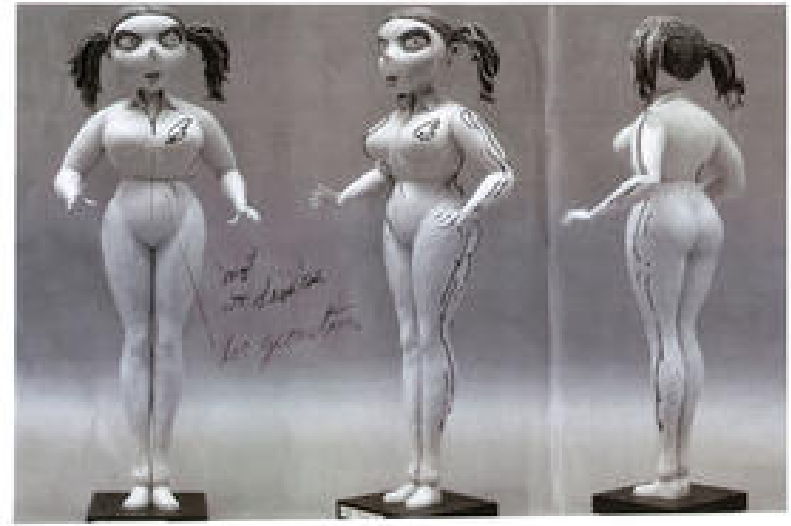


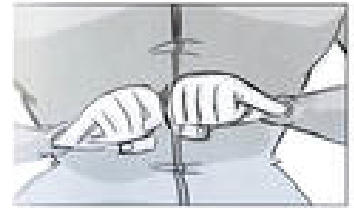
SEA MONSTERS



BOB'S MOM

GYM TEACHER
= current
x resistance





MR. RZYKRUSKI

FROM MOLDS TO MONSTERS

Once the character designs are finalized, the next stage is to build them all as puppets. Due to the tight schedule and the sheer amount of work involved, the task would eventually be split between the team at Mackinnon and Saunders and puppet supervisor Andy Gent's London-based crew.

The process begins with the approved character maquettes, from which another identical character sculpt is created, but this time it's in a 'neutral position' with its legs apart and arms angled away from its body. From this 'neutral' sculpt, a series of hard, technical molds are made of the head, body, hands and feet by the mold-making department.

"Each character might have ten, a dozen molds, depending on how complex it is," explains Mackinnon. "The eyes will be separated, the hair; so you have all these individual elements that have the molds taken off. Then they go through into the armature department."

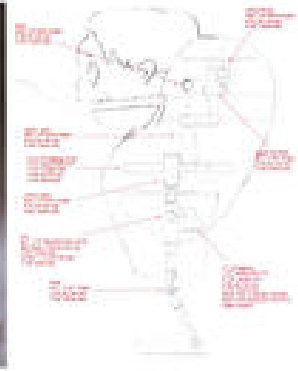
Armatures are jointed, movable metal skeletons, similar to a human skeleton, typically made from steel with occasional brass or aluminium elements. These metal frames have ball-and-socket joints that allow the puppets to be positioned as required by the animators, and each armature is designed to fit inside the molds.

"That's where the challenge is," says Mackinnon, "because some of the designs are quite extreme and exaggerated proportions, and it's up to the armature maker and the puppet maker to judge what strength the armature needs to be, and how much flexibility is required. Is it going to move like a human skeleton or an animal, and where will the points of movement be? The process is done in conjunction with the animators, the people casting the puppet and the costume people. There is a lot of discussion on exactly how that jigsaw of pieces will eventually be brought back together again."

After the armature has been built, the puppet's skin is cast from the molds in either foam latex or silicone. Foam latex tends to be used for bodies because it's the softer of two materials and allows the armature to bend better. The most visible components, such as heads and hands, tend to be cast in silicone because it's stronger and more durable, although both will, eventually, degrade and will require on-site maintenance.

As time-consuming and complicated to build as the armatures themselves are the puppet heads, which are cast out of silicone and then fixed over a fiberglass skull. "It's very much like a human skull in many respects," says Saunders. "It supports the skin, supports the eyes and the mouth, and the teeth and the neck joints." Fixed to the fiberglass skull are a series of ball-and-socket joints and mechanisms that allow the skin to move, thereby giving the impression that the eyebrows are being raised or lowered, the cheeks are moving up and down, and the mouth is opening and closing.

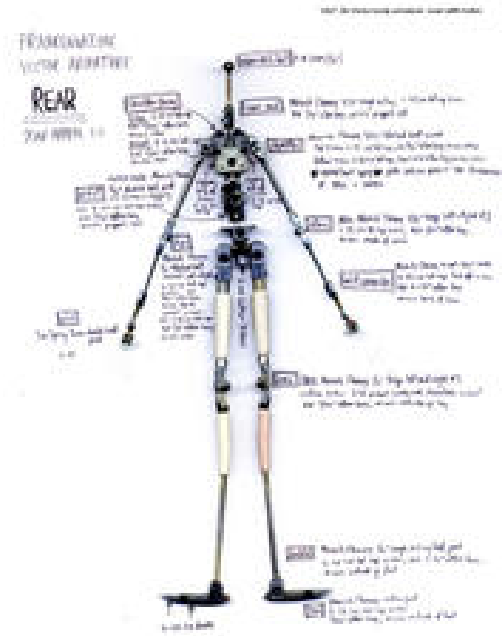
On past stop-motion movies, including *The Nightmare Before Christmas*, replacement heads and mouths were traditionally used to show the puppets emoting and speaking, with animators switching and swapping as required. For *Corpse Bride*, Saunders had pioneered a geared system inside the puppet heads, similar to the workings of a Swiss watch. By inserting an Allen key into a socket in the puppet's ear and turning, the animators could open and close the mouth as well as make the characters smile and frown.



It was really successful, gave a lot of range of movement and the animators really liked using them," reveals Mackinnon, "so when it came to *Frankenweenie* we had to do something similar. Again Peter tackled the lead character of Victor because he had the biggest performance to give, but we also looked at developing a slightly simpler version of that system for some of the additional characters like Victor's mom and dad and some of the children, to give the animator a little bit more to work with. Tim's drawings have small, wispy mouths and it's very hard to get a big range of movement out of that. A lot of time was spent developing the internal head mechanics. A few things we had to go back and rework the sculpts and alter the mouths slightly, because once the animators started playing with the first puppet you realize you need to make adaptations, and that becomes part of the process."

Other puppets were fitted with tiny lip paddles embedded into the silicone skin so the animators would be able to grip a puppet's lips and move them into whatever position was required to enable a convincing lip-synch for dialogue. "A good example of that is Edgar because he's got such a big mouth," explains Mackinnon." He's got so much expression in that face and you try and find ways to create the phonetic vowel shapes with the mouth. We tend to put paddles in the upper and lower mouth and ball shapes into the cheeks, which can stretch them out and open them a little bit wider."

Once the internal workings are complete, attention is turned to the outside. First the puppet is painted, which, in the case of *Frankenweenie*, meant black and white and various shades of grey, and much trial and error. "In old black and white movies they know the tricks of painting lips green to make them look a luminous deep red in your home movies," says Gent who was previously puppet supervisor on *Corpse Bride* and *Fantastic Mr Fox*. "Because our darks in this film are so dark and yet the light's are really



light, it meant midgrays could go very much one way or the other; they could become very dark or bleach out. We had to very carefully find that lovely grace of grays in between that could give us the variation to give everybody their own little charm. Eventually we got the color palette mixed so we knew what would work and how far to push things to get a little bit of shading, because if there were any sculptural marks on a face, like bags under their eyes, the lighting could make it go pitch black or it could disappear if it was really, really light."

Once a puppet's painted, the next stage is to apply its hair. To head up the wig department, Mackinnon and Saunders drafted in Suzanne Moulton, who had been the lead hair and fur fabricator on *Coraline*. "There's quite a bit of action around the characters that require hair to have some movement, so we spent a lot of time on developing wigs for the puppets, what materials to use and how they would be locked into a puppet's head, because an animator needs to grab on to a head to move it," says Mackinnon. Initially synthetic hair was used, but as the puppets were put through a series of animation tests and viewed in high contrast black and white, "it didn't look too good," says Mackinnon. "It had a slight sparkle to it, so we had to switch to using human hair in the end." Because of this, work on the wigs was completed in London by Alex Williams.

Then, of course, there are the clothes the puppets wear. "The costumes are like another puppet in themselves. They have to be able to stretch and lift and do everything you expect your clothes to do, but also you have to animate them, so we think about them as another puppet," says Gent, whose team at the affectionately named "puppet hospital" also had to create some of the costumes. Bob's T-shirt alone took one of the lead costumers, Janet Knechtel, over six weeks to create as each of the stripes needed to be handcrafted together so that it would move naturally and allow his large foam body to perform without interference.

This painstaking attention to detail is much the same with the other elements of the puppets. "We made hundreds if not thousands of spare hands," says Gent. "If something breaks and we can't repair it on set, we'd saw the arm off and put a new arm back in place."

To create the Sparky puppet, Mackinnon and Saunders worked closely with animation director Trey Thomas on the early prototypes, and supervising armature designer Richard Pickersgill was tasked with the design and build of two complex ball-and-socket skeletons (one sitting, one standing) that took several months to develop. "Trey really wanted to get the most out of all the characters but particularly Sparky," explains Saunders. "It's not an easy character to make an armature for and Richard did a really brilliant job, and then, under Trey's instruction, more refinements were made. Trey pushed and pushed and pushed to get the very best."

The challenge with Sparky was that, as a character, he had to be able to emote and perform, and yet he had to be small and thin enough to not unbalance the scale of the sets and the other puppets, as everything else would be dictated by his size. "You don't want Sparky to feel too big, and too clumsy, so he has to be quite small, but then there's a limit on how small the joints are that we can fit inside the legs of the puppet," says Mackinnon.

Above: A close-up view inside Victor's "head" – opposite: top row: Metal rodding – middle row: Victor's face and head sculpture.
Bottom row: Armature for the Sweetie Pie puppet head.

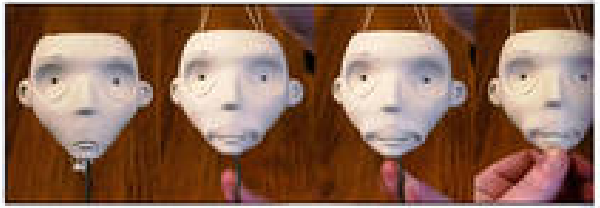
The first prototype of Sparky worked well technically, but his design had evolved over time and when, just a few months before shooting began, Burton insisted on a last-minute redesign of Sparky, the task of building the new puppet had to be split between Mackinnon and Saunders and Gent's team in London. Dead Sparky would remain with the crew in Manchester, and the London crew would take on Living Sparky.

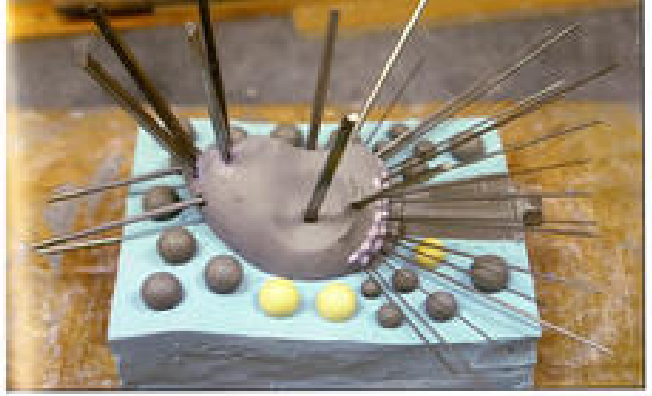
"We weren't many days off shooting at that point, so it was all hands on deck," Gent remembers. "We got an approval on a new sculpt and then very, very quickly had to accelerate our development time. Every hour of the day was spent working on that for about ten weeks till we got the first one out that could perform and could shoot. You have to think on your feet and move things through. It's like steering an oil tanker. To stop or turn it around takes an awful lot. It's a saving and a curse of stop-frame that it takes so long to do things. But that means you've got time to change things on the way as well."

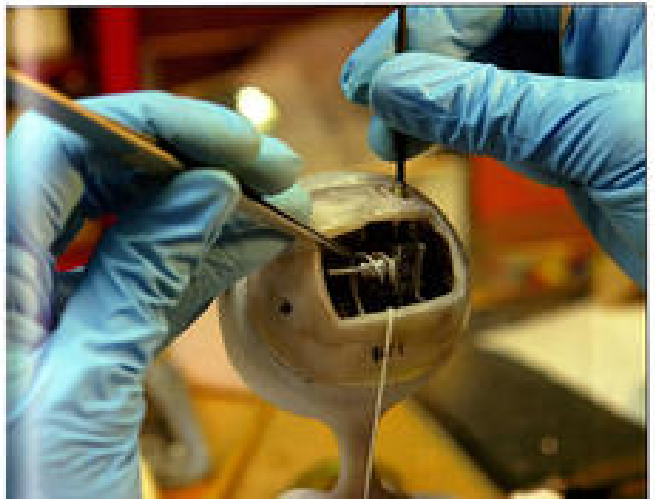
At the same time as Sparky was being remodeled, so too was his armature. "We looked at ways to get the legs as thin as we could because in Tim's original sketches he was a barrel-like shape with very, very thin pinpoint legs and paws, and how were we going to crack this incredibly tiny, tiny armature," continues Gent. "Trey was very involved with getting him to do all the movements that you want a real dog to do and make that all work as a puppet."

Gent's team utilized eyeglass hinges and watch parts in the armature for Sparky's tiny joints and ankles. "He's at the physical limit of what we can do with metalwear and ball-and-socket joints," he says. "Animation supervisor Mark Waring worked on the armature and pushed every single limitation to get the legs as fine and as beautiful as we could. To try and keep to that design, we were down to some of the tiniest parts because there was so little space. There was hardly any material to go on the metal, and the metal itself was down to one or one-and-a-half millimeters thick. We did 13 versions of his lower legs alone; to work out a tenth of a millimeter between them, just to get it right. But he's an amazing little puppet. He can open his mouth, his lips; he can snarl, move his ears. He's pretty expressive. And with three or four big animation tests we managed to get one that was good enough to start shooting with. But the one puppet, as good as it was, couldn't do all the movements we needed. So we developed a sitting one, a lying one, and we went on to do versions of the dead one doing the same thing." Once Live Sparky was up and running, Gent sent the armature back to Mackinnon and Saunders so they could use the same body armature for Dead Sparky, although "the heads were slightly different, so you had dead heads for dead dogs, but you couldn't put live heads on dead dogs."

The final Sparky puppet measured just over four inches high and around six inches from the tip of his nose to the end of his tail, and set the scale for all the "hero puppets," among them Victor and Mr. Rzykruski, who was exceptionally tall at around 22.5 inches. "You don't want to go much bigger than that because if the puppet's too tall then the animators have got to reach over the set, and it's very hard for them to delicately manipulate the face when it's so high up," says Saunders. "And because there's a mix of adults and children, we had to







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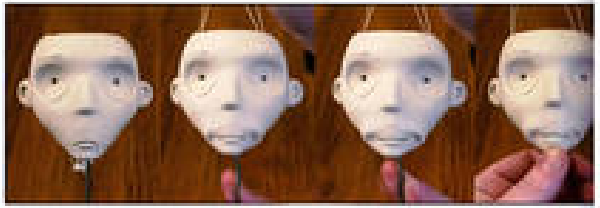
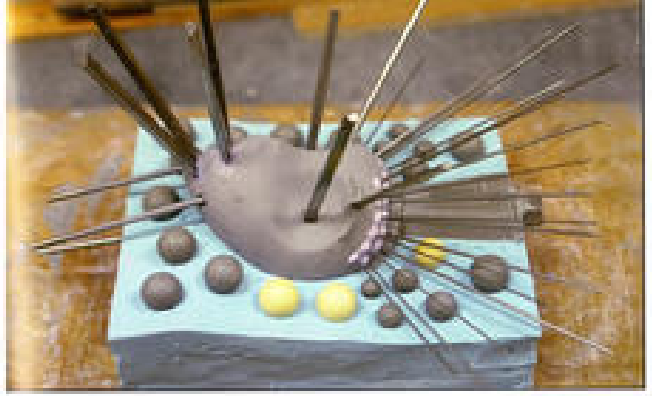
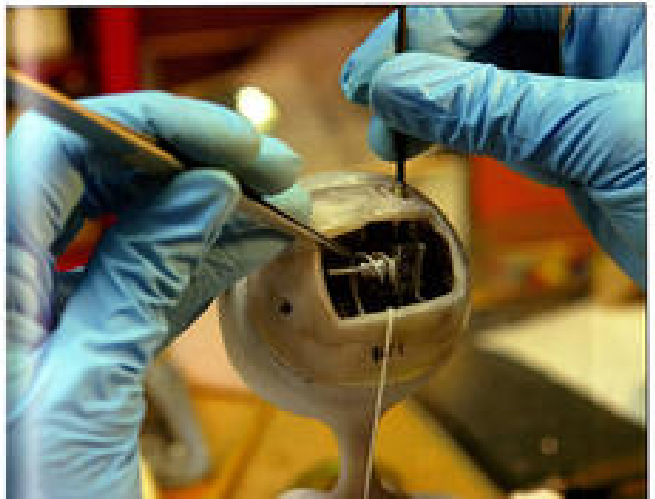
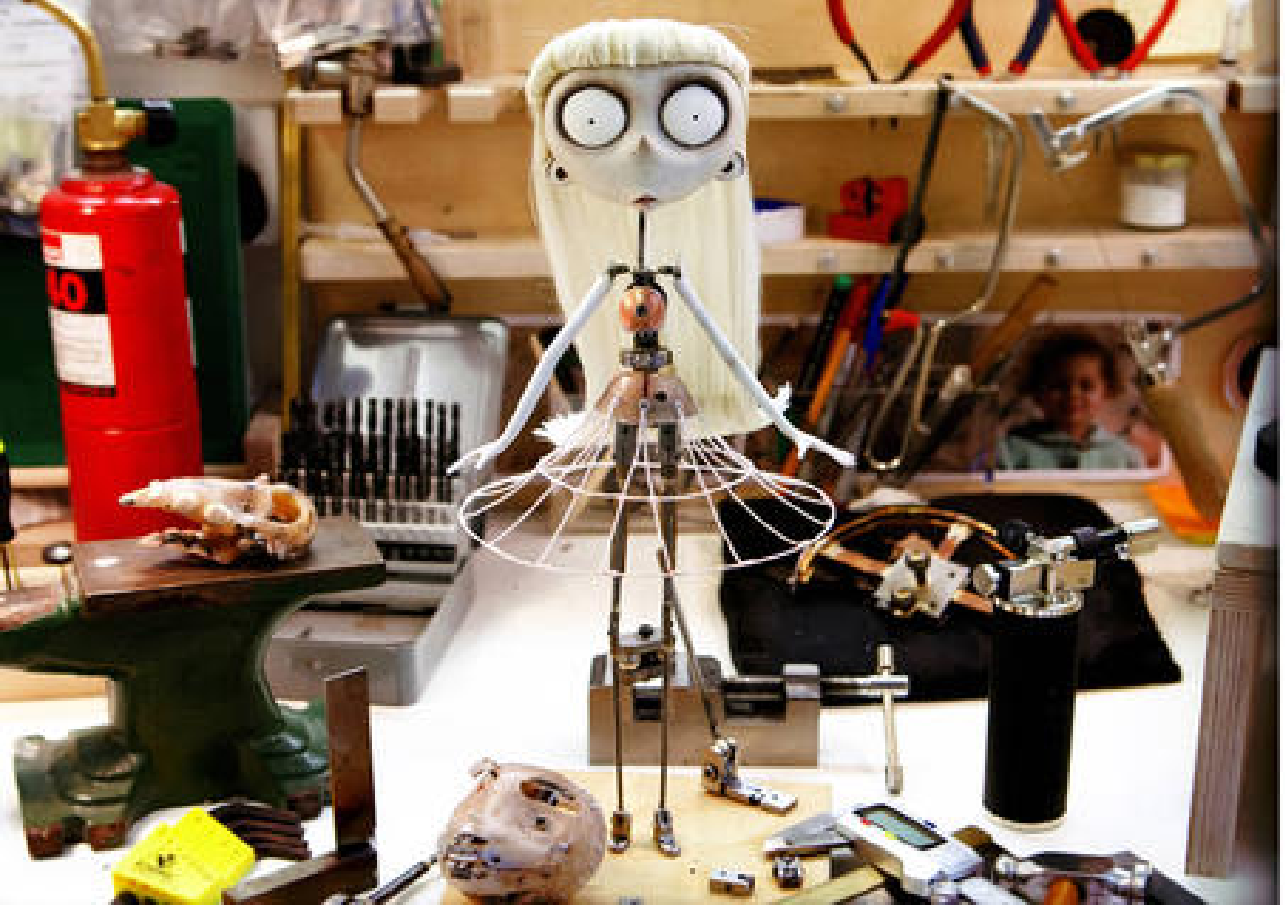








balance how large the children could be to make them practical, without making the adults so huge they become unwieldy and too heavy to animate."

Despite the Allen key system employed by the Victor puppet, Burton and Thomas insisted on replacement mouths for Mr. Rzykruski. "They wanted the face to have the expressions and range you would get from a silicone head," reveals Mackinnon, "so it's a combination of a silicone head with silicone eyebrows and all the movement you'd get from that, and then a series of replacement mouths that fit in that, again made out of silicone so they match, and then attached onto the front of the face. You've also got the other challenge that he has a moving moustache, and the animators got to not only replace the mouths but also replace and reposition the moustache for every frame. They also wanted moving cheeks on top of that. Once you start the cheeks moving all the positioning of where the replacements are going to fit starts to alter as well. There was probably about six months of development that went into Mr. Rzykruski, and quite a few late nights and sleepless nights as well."

While Mr. Rzykruski was big, the Turtle Monster puppet was, at just over two-feet tall, 'on the outer limits of what's practical to animate," says Mackinnon. He was made from foam latex, with a polyurethane foam shell, to keep the weight down. "It's like a small child, really. He can just about stand up, but if he's going to walk forward a rig was essential to carry the weight of the puppet."

Even at two feet tall, the Turtle Monster was, of course, not to the same scale of the "hero puppets," and would be used with scaled-down sets and special effects to cheat its size. But in order for Victor and Elsa and other "hero puppets" to interact with the Turtle Monster for certain scenes, Gent and his team built various giant limbs, including legs that stood five-and-a-half feet tall, and a giant mouth measuring one-and-a-half feet across. "Very much like in *King Kong*, where you'd have the oversealed hands and body parts," Gent reveals, "so we could use the real puppets and get the interaction in those horror movie moments."

Gent's team, which at its peak numbered 40, also built two different scale Sea Monster puppets. There were hand-size ones for interaction with the various "hero puppets," while for scenes involving the two-foot-tall Turtle Monster, one-inch-long models were created using silicone over a wire armature. "You've got to do everything not to compromise the design, and those designs were phenomenally thin, so almost it got too thin for even our micro levels of ball-and-socket armatures, we went to wire," says Gent, who'd done something similar on *Fantastic Mr. Fox*. "They were incredibly fine, but it meant we could use the Turtle Monster with the miniature props and get beautiful springing, leaping movement from the Sea Monsters. We would never have managed that with just ball-and-socket armatures."

And yet the most challenging puppet to make, according to Gent, was the Vampire Cat, which begins life as Weird Girl's cat, Mr. Whiskers, before being fused with a bat. "Not only did that need to be an incredibly fast development in order to get it to fit into the shooting schedule, it was also a hugely ambitious puppet," says Gent. "It had to change from one, small cat into a full silicone, vampire-winged, bat cat, and it was built for a mixture of wire and ball-and-socket joints and expanding things, so you could literally pull his nose out, distort his eyes and pull the face apart."

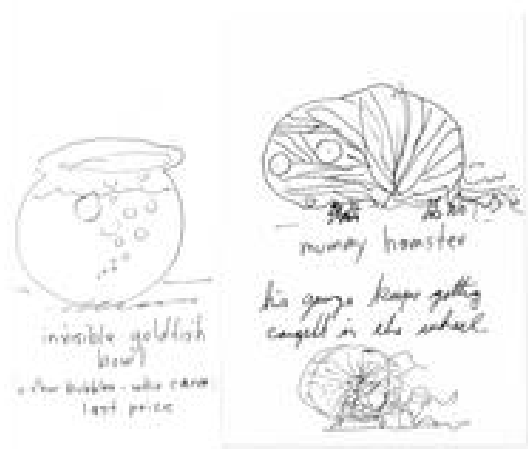
In the end, between the two units, close to 500 puppets were built, a vast amount that included all the leads — both human and monster — and background extras, with the team at Mackinnon and Saunders having designed and sculpted almost all of the original character maquettes, as well as produced several hundred puppets and armatures, while Gent's team designed and built several hundred of their own, as well as provided on-site repairs in the "puppet hospital." Notes Abbate, "We assembled the most talented, innovative teams of designers and artisans the UK could offer and it was amazing to see how quickly and collaboratively they worked to realize Tim's vision and bring these characters to life."

"At the end of the day you want to believe whatever you're looking at on-screen," says Gent, "Nobody looks like Victor, and there's no real dog that looks like Spunky, but what you want to do is stop thinking they're puppets, and believe in the character. It's based on a reality, but it's taking it to another reality, and that's the magic of stop frame animation. Where you're there, following the eyes of a puppet, to see what he looked at, that's very special. That's the challenge with this, to make these guys that are preposterous in look and physicality get to the stage where you don't question the fact they can do these things."

"Tim's creativity, enthusiasm and humor are inspirational, and although some of the challenges pushed us to the limits, I think we came close to realizing the vision he had for his cast," says Saunders. "It was very much a collaborative effort between our team and Andy's talented team, with Tim and Trey as the ringmasters trying to get the best out of us."

opposite: the many workings of Weird Girl. this page above: Introducing the "oversized" Turtle Monster toy

"I think the character of Victor is loosely based on Tim, and maybe not so loosely," says producer Allison Abbate. "Both were born in Burbank, both are filmmakers, both are wise beyond their years and both have a really close relationship with their dog."



every morning, the chance to write interesting but funny things about science, and really humanize what scientists do."

In fleshing out Victor's classmates, Burton again drew on personal experience. Even Weird Girl was based on someone he knew growing up. "I remember somebody like that," he notes. "Actually there were a couple, and they always had blonde hair. The interesting thing for me was not how weird you feel as a child but how weird other people are and how weird it is to be in that social climate and the political climate of the classroom. All those characters from monster movies easily plug into those dynamics — weird kids and people that freak you out in school. It was quite easy to relate them to Boris Karloff or Japanese mad scientists or other characters that stem from those films.

"It was interesting, too, trying to balance all the kids and what they are and what they represent. Again, I didn't apply anything directly. Victor is the outcast kid, he's the loner; and I guess Elsa is kind of the girl you wish you'd had as a girlfriend but never did. For me, Elsa represented the person I never really got to know in school but always wanted to get to know in school, because I didn't really get to know anybody. But almost everybody is strange. I guess Bob is the most normal one, but for the most part they're all pretty out there, as I guess most kids are. It's fascinating how people treat others and will pick on somebody they think is weird. Kids, they're horrible. It's like *Lord of the Flies*; they just pick on anybody. It can be quite devastating."

The character of Victor's neighbor, Mr. Burgemeister, was also a familiar one growing up. "There's always one person in the neighborhood like that, obsessed about their lawn. It seemed you couldn't buy a house on a street unless there was one person like that," says Burton who was keen, too, that Victor's parents be normal. "We wanted to make sure there was a certain reality to them and a positive nature to them," he says. "They want the best, as most people want, for their children, and are sensitive to what happens to him and the loss of his dog. They realize it's a big deal. Yes, they've got a child bringing their dog back from the dead, but they're still, basically, good parents. So it plays on that kind of slightly fifties kind of classic nuclear family."

As for the town in which Victor and Sparky live, Burton always had a setting in mind. Despite being called New Holland, it is, to all intents and purposes, Burbank. "I had pitched, 'Do we want to do what we did with *Charlie and the Chocolate Factory*?' Which was somewhere in the ocean between America and England," August recalls, "and he said, 'No.' He definitely wanted it to feel like America with cookie-cutter houses. So that pushed it into a new, but period, town."

The town's name was borne out of necessity. "There needs need a windmill," laughs August. "I knew we would get up to a windmill at the end and I needed to figure out if we're in this manufactured, California town, or wherever this town is, how and why is there a windmill; so I decided there would be this whole theme, that this was New Holland, and since it had New Holland, I had Dutch Day, which became a unifying place for the second act, and it established who Mr. Burgemeister was, what the town was like, what Elsa was doing."

NUTS & BOLTS

At the same time as John August was working on the first draft of the script, production designer Rick Heinrichs was beginning to design the world of *Frankenweenie* — for the second time.

"It was great fun doing the live-action version. I got to realize, during the making of it, I really did want to art direct and be a production designer and was going to pursue that," says Heinrichs, who went on to conceive the sets for Burton's *Sleepy Hollow*, *Planet of the Apes* and *Dark Shadows*. "It was a fantastic exercise in trying to combine location work with stage work and using force perspective and all the great tools of old black-and-white horror films. And it was very thrilling to walk onto a stage and be in an environment you created. But the advantage of doing a stop-motion version is the freedom of having it be much more about the design ethos of layering Gothic horror on top of bland suburbia, a layering of opposing elements that creates a different environment, which is how a kid would see that world. Also, the kind of characterization and caricature you can do in animation is, in many respects, much more in keeping with the look and feel of what *Frankenweenie* was originally intended to be. It's very graphic — much more so than even the first one."

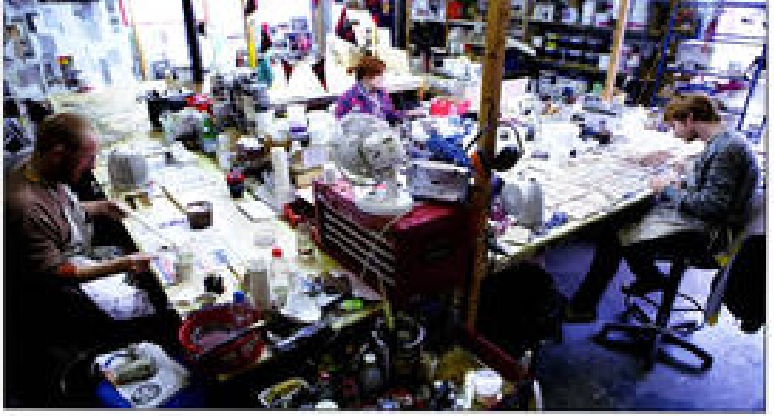
"For me, the whole goal on this was to do something different, and Rick got into that as well," says Burton. "It was a way to revisit something, but also go into new territory and explore things we couldn't necessarily explore back then. There's a bit more of a design element to this than the live-action, and it felt like a new thing for both of us."

In autumn 2008 Heinrichs and a small team of conceptual artists establish[ed] an art department in Los Angeles near the studio where Burton was working [on] *Alice in Wonderland*." Rick's such a visionary in his own right, so it was really spe[cial] to get him," says producer Allison Abbate. "He lived the first one, and he lived [in] Burbank, so it's nice to have that eye that knows what it really looked like."

While the original, live-action *Frankenweenie* had been filmed mainly on [lo]tion in Pasadena, Burton wanted the suburban environment of New Holland to [be] based purely on the one he grew up in: Burbank of the late '60s, early '70s. "Here's [the] core Burbank," he says, "going back to the Burbank I remember, to the school, [the] city hall, the park, the houses; everything was based on that."

It was an environment that Heinrichs was also familiar with, having spent [time] there working at Disney, as well as having been raised in a "post-war, suburban [de]tract in Illinois, so I have a good memory of the flatness of it. There's something about that environment that gets inside of you when you're growing up in it. [For] the live-action version, we were subject to the available locations we had [and] settled on a Craftsman-style neighborhood, which felt right for that, felt right [for] the family, felt right for the character. Here the neighborhood is more of a mid-[20th] century, American Southwestern development, sparsely treed, one-story, ranch-style houses."

The concept was to create a mundane environment, a blank, suburban canvas on which the characters and their imaginative sensibilities could come to the fore.



Clockwise from top left: Heath at work in the art department; art director Alex Walker; art department buyer Corinne Bellgi lays out some fabric swatches; modeller Paul Thorogood; and production designer Nick Heinrichs chats on Weird Girl's bedroom.

in a fairly generically boring California suburb with no lavish details, with nothing really exciting about it," explains supervising art director Tim Browning. "Tim wanted to avoid all the usual curls and bells and whistles and really go for something that was oppressively boring. Which is a challenge in itself from a design point of view because you always want to embellish."

Realism was again key. "On the one hand we're trying to create an unusually realistic world for an animation," continues Browning. "Everything's very straight, hard-edged and realistic, but as soon as you've got a kid, like Bob, who looks like a Mr. Men character, you have to build specific props so they can fit into them. That's the biggest aesthetic challenge, making things realistic on the one hand but also realistic in their interaction with the characters, because the characters are so peculiar and so spindly or fat or weird looking, it's hard to make things that fit both worlds."

Once the look of New Holland had been established, Heinrichs and his design team focussed on the more individual elements, among them Victor's attic, which serves his "laboratory" and which is where he reanimates Sparky. "There are some things that are definitely holdovers from the first one, and the attic is pretty close to how it always has been. It's just designed in a little bit more cool way," says Heinrichs who, for the short, had managed to source some of Kenneth Strickfaden's electrical equipment that had been part of Dr. Frankenstein's laboratory in the original *Frankenstein*. "One of the things we discovered was how many good decisions we made the first time. But it was also great to be able to rethink the attic. We've manipulated things so we have more interesting corners, which can grab light and create shadows in a more interesting way."

The look of Victor's school, New Holland Elementary, with its central towered entrance, was also based on Heinrichs' childhood. "I went to that school. I suppose Tim did too," he says. "When that style of architecture erupted across the world in the mid-twentieth century, it was seen as innovative and simple, but when you're a kid, growing up with it, it's kind of monolithic and impersonal looking. I think if you were a kid, faced with environments that look flat and mundane, you develop more of a sense of your creative world. You go more into your head, which Victor ends up doing." Victor's actual classroom was a favorite set of Heinrichs and another drawn from memory. "I love the school room," he notes. "It has a very kind of Mexican feel-out feel to it that feels like a memory from my childhood. I'm sure there's going to be a lot of people for which that's a bit of a memory."

Another set familiar from the short was the pet cemetery where Sparky's burial with its animal-themed tombstones. "We came up with those in the UK art department based on sketches from Tim Burton," recalls art director Alex Walker. "Tim sent us various, funny sketches with funny-named pets that he wanted us to work on. He wanted them to have a Celtic feel." Sparky's headstone was made of two bones in the shape of a cross and was the same design as in the original *Frankenweenie*, while the mariner mausoleum that houses Nassor's hamster was, according to Walker, inspired by the dome-shaped one in *Frankenstein*. The set itself was made from fiberglass to allow the puppets to be pinned into the ground.

Also familiar from *Frankenweenie* and the short was the windmill that's featured in the film's climax. "It's one of the elements that refers directly back to the original *Frankenstein*," says Heinrichs, who designed the wooden, clapper board structure to be part of New Holland's original real estate development display. "I've worked on several films with Tim which have had windmills in them. They're very iconic Tim Burton imaginings. It's not a golf course in this case as it was in the live-action, which, while fun, was never quite tall enough to be what it was supposed to be. But I love the idea that it was the advertisement for the town way back when."

Once the designs for each set were locked, the next stage was for their construction. Supervising the build at 3 Mills Studios were art directors Browning and Walker. "Storyboards are essential in the planning and logistics side of art direction," says Walker. "Stop-frame is completely different to live-action because every single frame is a picture you've got to break down and work out each element, whether it's lighting, special effects, the rigging, puppet access or what the puppet's got to do. Every single frame is designed, and we'd often design to the storyboard. Normally on a live-action film, you'd build the set and then the director will come in and choose an angle. On stop-frame you're designing the shot and making the stuff for that moment, which you might then not be able to use on another shot because that's got to do something different, so you end up with duplicates of things. It's quite a minefield."

With stop-motion animation, everything has to be built from scratch. Every set. Every prop. Unlike live-action films, there are no storage or prop houses where you can rent off-the-shelf items. If the script requires a car, someone has to make it. Even though production on stop-motion movies has increased in recent years, they're all different styles and scales, meaning nothing can be carried from one film to another. Occasionally, ready-made items can be repurposed. For *Frankenweenie*, the production used Astroturf for lawns, trimmed with shears and treated with sandpaper, and artificial and silk flowers for the floral displays in Mr. Burgemeister's garden and elsewhere. Browning even recalls buying some doll's house furniture for Weird Girl's bedroom "in a really tacky little shop in the Italian Alps" while on his skiing vacation.

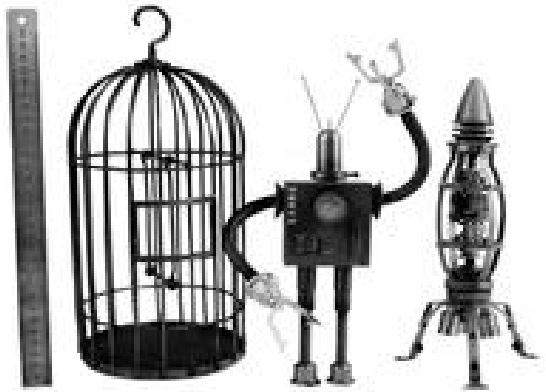
In total around 70 to 80 sets or partial sets were constructed. The majority were built to 1:3.6 scale — otherwise known as "puppet scale" or "Victor scale" — and were unusually large, measuring up to 50 feet by 20 feet. "It's going to be very interesting, because I truly think it's going to approximate live-action in many respects that are going to be quite startling," says Heinrichs.

"Stop-motion sets need to be incredibly strong and are built on steel frames to help combat a phenomenon known as "set shift." "They have to be more solidly constructed than a regular live-action set simply because they're on set for months at a time and they'll breathe as the temperature changes," says Browning. "They have to be really rigid and nothing can move and that, in itself, is a challenge. Even with a big, solid base you still get movement, you still get set shift. If you left a camera running a frame every half an hour for a few weeks, then watched the footage back — because it's cold at night and warm in the day — you'd see the set move, even if it's only a millimeter or two in small bits. But to look wide on a screen, it's a pain. Quite often that needs to be fixed in visual effects. And if someone's

animating on carpet, however careful they are, the carpet in the final footage boils and bubbles and wriggles around, and quite often that has to be fixed in visual effects as well. Whereas before you'd simply have to live with the defects, which has always been part of the charm of stop-motion, now, because of the VFX capabilities we have in post-production, we're able to fix it."

Because of the sheer size of the sets, animator access — how the animators physically interact with the puppets to move them — became even more important, with Browning and Walker incorporating hidden trapdoors or access points or designing them to come apart with "invisible" joints. "It was a bit of a nightmare for everybody, not just the animator," says Walker, "but also for the set dressers trying to work out how they can keep the value of the set. Very often, very quickly, they've got to make holes for animators to get in, without creating set shift or moving anything on set. For the town set, it helped that the shops were modular and we could take bits on and off. We had so many bits of tarmac road. The painters had to keep making bits of road, to fill in where we were chopping bits out."

The town set was pivotal for the film's third act, whereupon the various monsters rampage through the streets of New Holland during the Dutch Day celebrations, causing havoc and destruction, especially the Turtle Monster, who tears into a fairground and Ferris wheel. For shots involving the two-foot-high



Turtle Monster puppet, a fifth-scale, L-shaped section of town — that's a fifth of the size of the Victor puppet — was built, measuring 26 feet by 13 feet with a small amount of CG set extension. "Almost everything else was the puppet scale," says Walker, "so where we have Victor and his friends running through the town and they're passing a stall, that's all at the puppet scale, all in camera, to avoid any visual effects." Some individual elements, such as a phone booth, were also designed to a seventh scale to further accentuate the turtle's size.

Storyboards were again crucial in building the town set. "It helped us logistically to break up the town into little sections, which meant in practical production terms we could shoot different bits at different times," recalls Walker. "But as the storyboards were getting confirmed, we were getting to see more and more of the town and the shots were getting wider, and we needed more shops in a row. Fortunately we had worked out the shops to be units that could go next to each other like building blocks. We could put different shops next to each other and use bits off of one and bits off another to make them look different with different signs."

The puppet scale town set ended up being almost 50 feet long and 20 feet wide with around 12 shops on both sides of the street, plus a cinema, city hall, wide pavements, a tarmac road, numerous Dutch Day stalls — selling beers, tulips, clogs, cheese, popcorn, et al — and a fairground. Moreover, it had to be dressed pre-Turtle destruction and post-Turtle destruction. "We really had to make a believable mess, so we made oodles of paper cups and hamburgers and hamburger papers and doughnuts and sausages and buns, so the set dressers could believably chuck this stuff about, at that scale, and all the lights had to fall down," says Walker. "That was quite a task. We shot it all turtle destruction first so they then had to dress it right at the end of filming as perfect."

Because of the sizes involved, the Ferris wheel was only built in its entirety in fifth-scale by Bristol, UK-based model maker, John Wright, and even then it measured three feet in diameter. For the puppet-scale shots of the wheel, one carriage was constructed, again tailored by the storyboards. "You don't want to build too much, but you want to build enough, so for the shot of the turtle coming up to Toshiaki in the carriage we had to painstakingly work out how much of the arm we needed," says Walker, "and obviously that has to look exactly the same as the quarter-scale one, which it did." Another element of the fairground was the octopus ride that was constructed in fifth-scale, again by John Wright, and which featured a working mechanism that meant it could be animated. "That was interesting," says Walker. "We soon realized all of these things needed an animator in their own right, so not only were you animating the turtle but the Ferris wheel and the octopus. It consumed quite a few people."

Another complicated set for the animators was Victor's house and the neighboring one of Mr. Burgermeister's. "We could separate those and then shoot individually, but when they were together, the set was probably 50 feet by about 12 feet, with the road and pavements and their gardens," says Walker. "It was a big set to manage, and animator access was quite tricky when you've got that very deep town. Victor might be running out of the house, down to the sidewalk, and

Top: Sparky and Victor in the attic laboratory set. Above: A concept illustration of the attic.

Clockwise from top left: Burton's sketch of Victor's roof and skylight; a concept illustration of Victor's attic interior; a concept drawing of the roof and pipework.

quite a lot of time to orchestrate the set to make each scene look for the particular camera. Along with the school set, where you've got so many children [illegible] across the lawn and down the pavement, a lot of time was spent [illegible] there both."

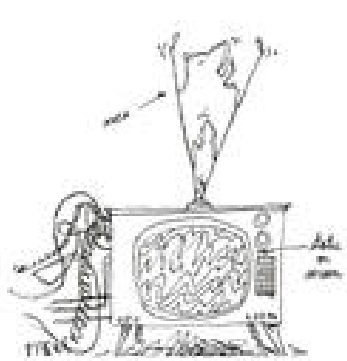
For the windmill, the art department built numerous puppet scale-sized elements. The only complete version was a fifth-scale version, which was made to [illegible] like a chimney, with pins keeping the breakaway elements in place until the animation needed the clapper board frontage to disintegrate. "As soon as the [illegible] start interacting with the windmill, we had to go to the puppet scale sets," Walker explains. "The sails were quite huge. They were six or seven feet long. Again we worked out which bits we needed to make from the storyboards and we ended up with two different types of sail: one full length where Sparky [illegible] around the top and then he slides down, and two shorter, stubbed bits that weren't full length but which would be extended using CG and which meant that in one shot you could see it rotate and see the other one too."

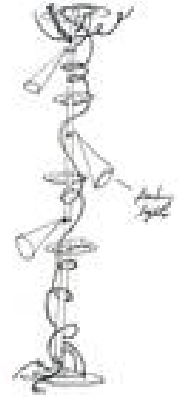
Arguably the biggest challenges faced by the art department, however, was the fact Frankenweenie was in black and white. "It does tend to change the approach you take to designing the film, but there's a quality to black and white which tends to reduce the options of what you're looking at to something very specific," says Heinrichs. "The advantage for us is we have the touchstone of the horror films we all love, so we concentrated much more on the graphic elements, rather than paying too much more attention to the color and getting [illegible] kind of other visual issues."

The initial plan was to paint all the sets and props in color, as normal. "One of the tests we did early on was seeing what happens to the image when we desaturate it, using color and filters to create a more deep black or more interesting shades of gray. But that got very complicated," says Heinrichs. "Everything was a big surprise," agrees producer Abbate. "You'd paint something one color and it would look one way and you'd convert it to black and white and it would be the other. We were definitely pulling our hair out for the first few months."

In the end it was decided to paint almost everything in black and white and shades of gray, although a few items, including the grass and flowers had some color. "We wanted to respond directly to what we were looking at with our eyes," [illegible] Heinrichs. "Even then, it wasn't without difficulties since every shade of gray needed to be checked to see how it responded. "Every time we got a new [illegible] we had to photograph it, light it, put it next to a puppet, check we got the [illegible] right and start again," says Browning. "By adopting monochrome we got much more control over contrast values and much more connected with what the final look of the movie would be."

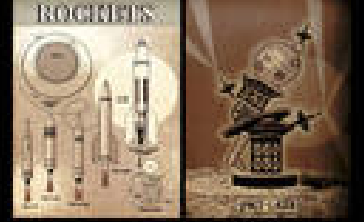
"It changed the dynamic, the focus," concludes Burton. "Seeing the things in black and white helped everybody. It's like, 'This is the movie. This is the feel of it.' I think if all the sets had been in color, everybody wouldn't have felt it the way it needed to be felt."

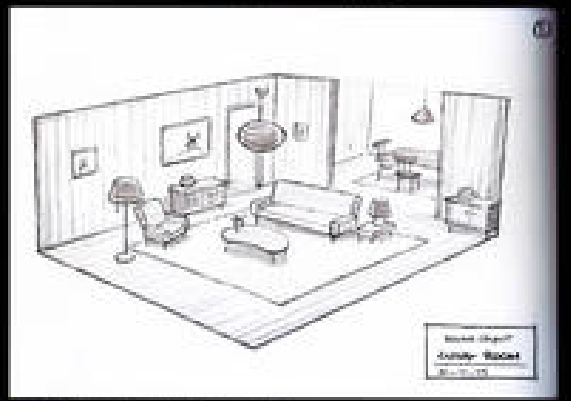




Above: Frankenweenie at work on the attic set. Top of Burton's sketches.

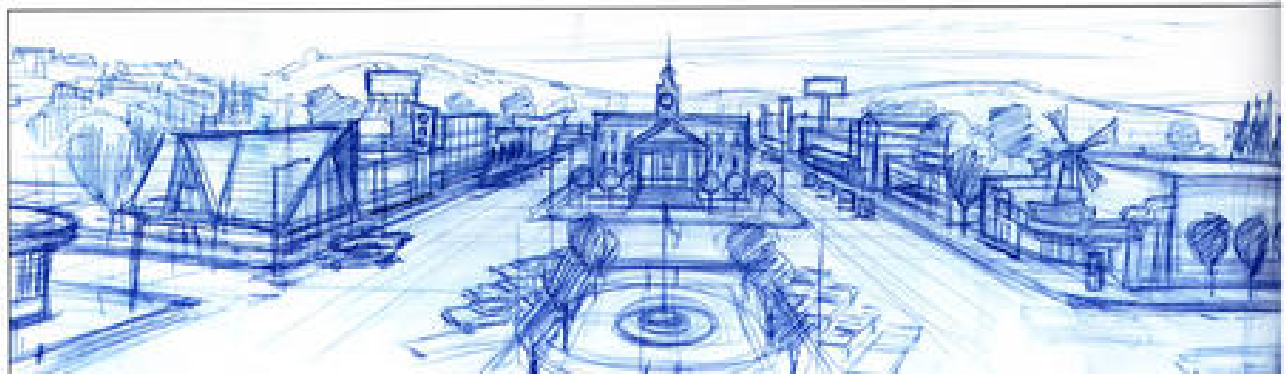
KITCHEN
WALLPAPER
& FLOORING

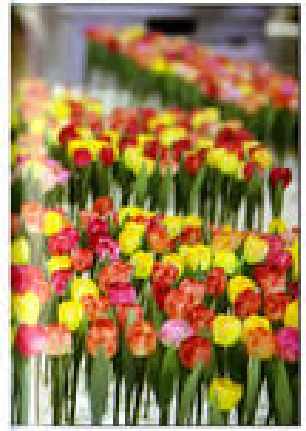


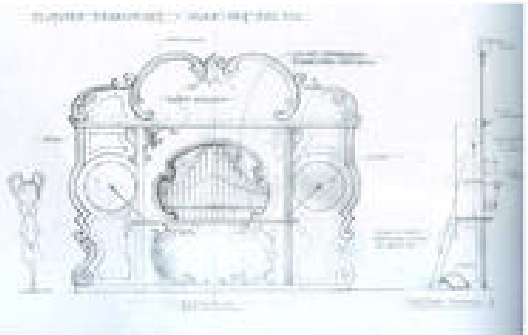


clockwise from top left: A shot of the Frankenstein's dining room animation supervisor Mark Walsh checks on the set the dining room as it looks in the final film.

clockwise from top left: Concept drawing for Victor's bedroom; Victor's personal sketch of the Frankenstein family's living room; part of the living room set.







THE WORLD'S SMALLEST WINDMILL

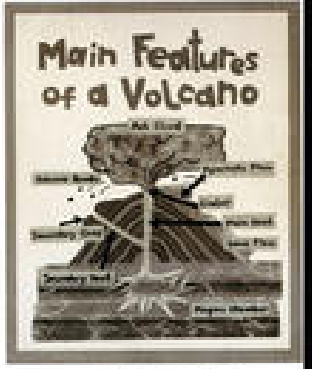
PAINT YOUR OWN CLOGS

GIANT DUTCH TULIPS

GET YOUR PHOTO TAKEN IN DUTCH DRESS

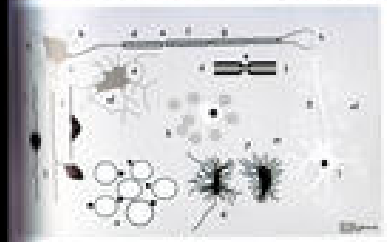
DUTCH DAY

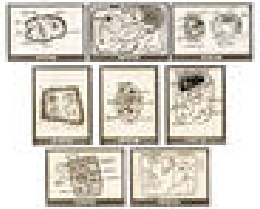
PLANTS

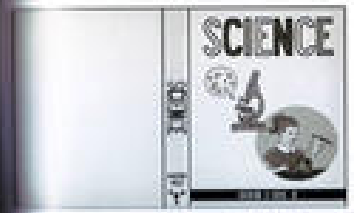

Main Features of a Volcano

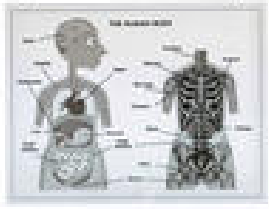
BUTTERFLIES

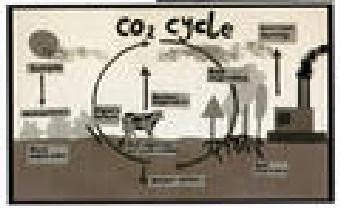
THE EYE




ANIMAL AND PLANT CELLS
ANIMAL AND PLANT CELLS

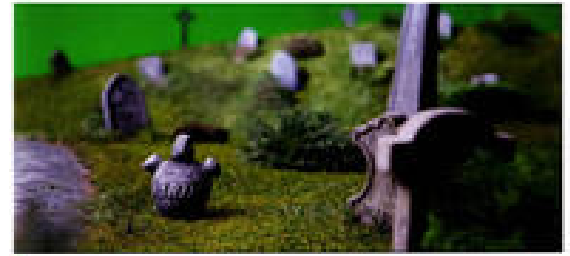

SCIENCE

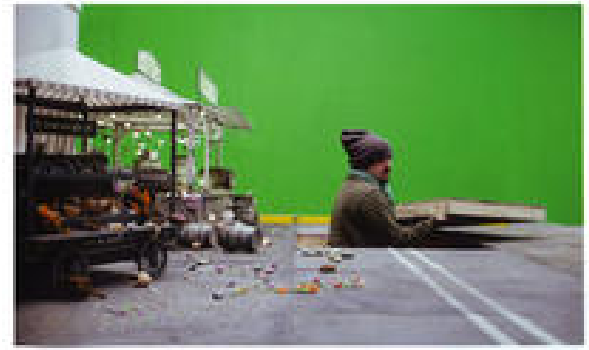



CO2 cycle

LIFE CYCLE OF A FROG

NEW HOLLAND PET CEMETERY





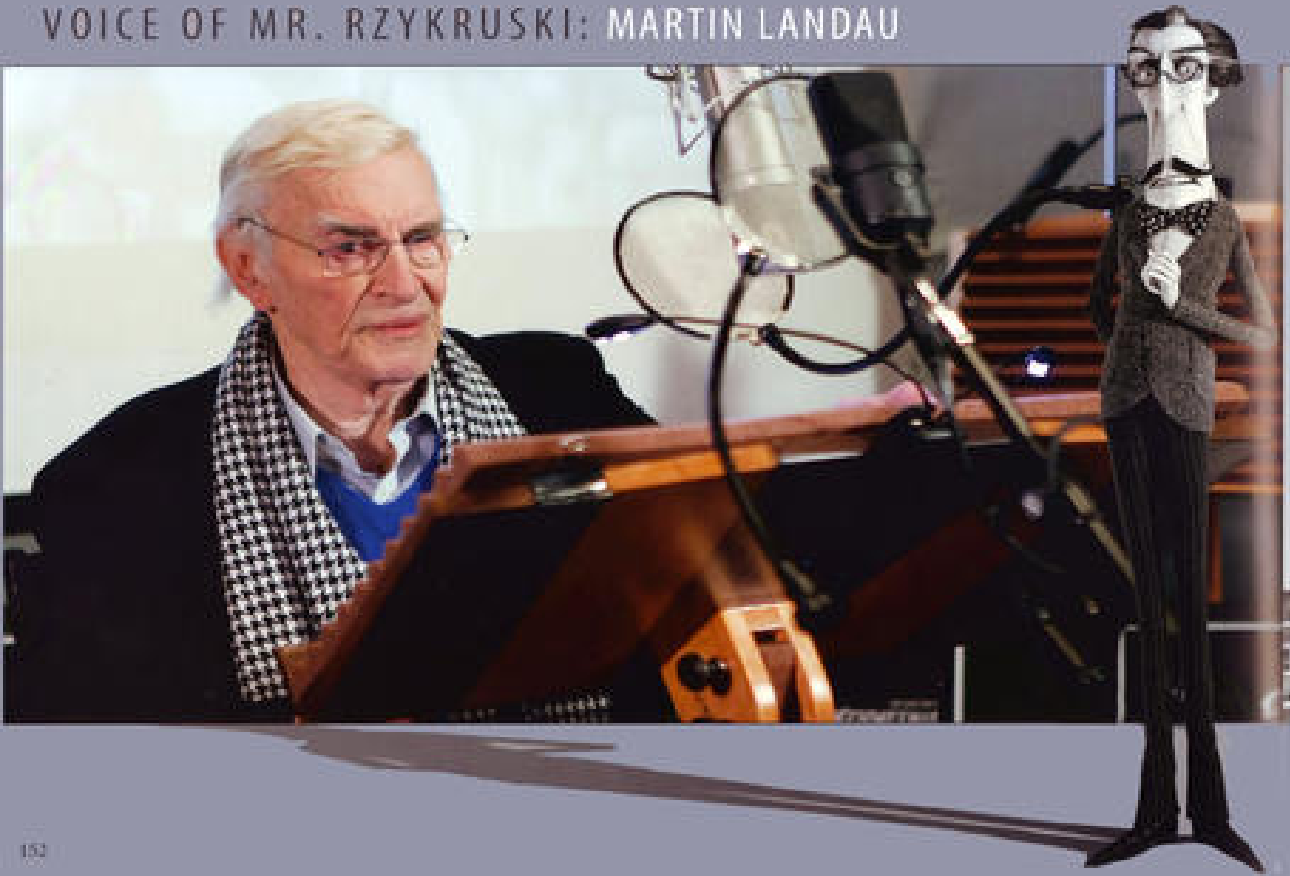
On page clockwise from top left: Concept sketches of the windmill; the painted fifth-scale model; inside the structure.
Opposite page clockwise from top left: Burton scrutinizes the inside of a "propped inside" work up; Tim Browning and Rick Heinrichs inspect a rough landscape and windmill.

Rumen and director of photography Peter Sorg deliberate in front of the windmill set.

VOICE OF MRS.FRANKENSTEIN,
GYM TEACHER & WEIRD GIRL: CATHERINE O'HARA

VOICE OF MR.FRANKENSTEIN
MR.BURGEMEISTER & NASSOR: MARTIN SHORT

VOICE OF MR. RZYKRUSKI: MARTIN LANDAU



VOICE OF ELSA: WINONA RYDER

VOICE OF VICTOR: CHARLIE TAHAN

TOWN HALL

VOICE OF BOB: ROBERT CAPRON

BOARD TO DEATH

On live-action films, the storyboard process varies from movie to movie, filmmaker to filmmaker. Some directors prefer to storyboard every shot; others use them only for complicated special effects or action sequences. With animation, storyboards serve a variety of purposes, not least providing the filmmakers with a pre-visualization of the entire movie, which allows everyone to see if the script and the characters are working. The storyboard artists are allowed a sizable input into the direction of the story, adding to the existing material and creating entirely new scenes.

"For a screenwriter, animation is a process of learning how to surrender," says John August, "because the story department is doing some of what the screenwriter would normally do, in figuring out how to tell the story. They will take your script and change it around and look at every little moment and at your shots and change things. On *Corpse Bride* I got frustrated at times; on *Frankenweenie* I didn't get frustrated at all, because I accepted they would go off and tell the story the way they need to tell the story."

The *Frankenweenie* story department was headed by Rob Stevenhagen, whose team of six storyboard artists would each be given different scenes to draw. These storyboards would then be pitched to Burton. "He would give notes and talk about how he would want them changed or how he would want to progress differently," says Abbate. "If they took some liberties or opened things up, that would be a stage they could talk things through with him."

"You want to allow your story people to be creative, and you want to open people up to ideas, but a lot of times things have a tendency to get sidetracked," says Burton. "And because you can do anything in animation, there's a tendency to over-cartoonize the action, so I was always reining it back. I think I was driving everyone crazy because I was saying, 'That's too cartoony,' but sometimes we'd do cartoony things, too. I wanted it to feel grounded and keep the focus on the story and the characters, keeping Sparky as a real dog and not overly doing things you can do in animation, keeping things like they're really in space and air and gravity."

"Tim was adamant he wanted the film to feel different from most animated films," says Abbate. "He and his editor, Chris Lebenzon, worked closely with the storyboard artists to make sure the cutting and the pacing felt like a live-action film. We even tried to storyboard the sequences as you would on a live-action film with master shots and cutaways and later encouraged the animators to really let the characters carry the performance. I think audiences will feel the difference when they watch it.

"As we started to storyboard and open it up, we moved things around and found the characters," continues Abbate. "And as the character designs changed, it inspired a lot of the storyboard artists to find certain kinds of behavior and imbue their characters with more of the character they would ultimately become, especially the children. Those really progressed as we storyboarded and they started to draw out the detail of the sequences."

When the initial pass on the storyboards is complete, they are photographed and turned into a story reel — a moving storyboard — by the editorial department. This story reel is synched up to whatever voice recordings have

a performance," says Abbate. "We can have up to about 30 separate units, which is like having 30 first units shooting at any given time, and every one will have acting moments and happy moments and sad moments, and you really need to be able to focus on each of those simultaneously." The animators came from all over the world, and had varying levels of experience, recalls Thomas, from none at all to the very, very experienced. "It's hard to get animators these days," muses Abbate. "There are so many options for them out there, so we had to look at training and recruiting in a very different way this time around. We found some amazing gems."

Abbate, who worked on The Nightmare Before Christmas and produced Corpse Bride and Fantastic Mr. Fox, handled the day-to-day running of the movie, liaising with Burton, Disney, supervising the budget, as well as the people on the ground, including the animators. "Unlike a live-action film, you're there for a long time and you've got lots of people and personalities to deal with," says Burton. "It takes a strong person; but the thing I like about her is, she's sensitive. I can relate to her because I know I'm being represented. It's a hard job, and she's tough, but vulnerable. You're trying to get the best out of people and it's not easy: they're in a darkroom, for three years, and she's got to hold it all together, and I come in and change something and she's got to do it for the budget and with everybody's personalities. It's not an easy job. She cares about it. That's the main thing. It may sound like it's a given, but it's not. And I've experienced that. I know when somebody really cares, and on a project like this, it's extremely important."

On *Corpse Bride* Burton shared directing duties with animator Mike Johnson. On *Frankenweenie* he was the sole director, although because of his work on *Alice in Wonderland* then *Dark Shadows*, he couldn't be on set every day. And so Burton's point man was animation director Trey Thomas, who had been an animator on *The Nightmare Before Christmas*, then spent eight years in computer animation at DreamWorks before moving to London to work on *Corpse Bride*.

"From as far back as Nightmare, Tim's always been drawn to Trey's animation," says Abbate. "On both films he was like a homing device to Trey's stuff, and so when we were looking for the right person as animation director, his name was the first on Tim's list. That union has been really useful on this movie because it's a singular vision but two skill sets. Trey brought his animation expertise to the job and executed exactly what Tim asked for. So we're getting a direct feed into what Tim wants."

One of Thomas' tasks was to be the conduit between Burton and the animators on set. "I'm there setting up the shots, working with the animators on the performances, trying to realize Tim's vision," he explains. "He has approved the boards. He has been working with the story artists, getting the story nailed down. He does the broad strokes, and I go in and make sure things work right, dealing with the minutia, to give him what he's looking for. He's constantly giving feedback about what he likes and what he doesn't like and we refine our approach based on that."

Before any scene is shot, the animators will do a series of test shots. These block throughs are rough and animated quickly in order to give Thomas and Burton a sense of timing, movement and performance. "It's just to get the basics, a couple of expressions," Thomas states. "We don't do full lip synch, we don't do full eyeblinks, it's just so everyone knows what we're going to get and we can discuss it one last time before the shot proper. We have animator meetings, where we look at everyone's shots of a character and decide this looks good, this you should avoid, this is this character, this not so much. We make pamphlets and say this is the way you should approach it, to make sure everyone's on the same page."

When several animators are working on the same character it's Thomas' responsibility to ensure the character remains consistent throughout. "For a Sparky shot we have our Sparky specialist team," Thomas says. "Tim will have looked at their shots and refined them, digitally, and handed them back to us, so we understand what he's looking for. You can do things on the storyboard that once you get out on to the set you have to adjust, and if something is severely different we'll ask Tim, 'Is this okay? Is this what you're looking for?'"

"What's funny is seeing how Trey works with these animators, because the technique is so second nature to him," says Abbate, "so he talks about what's within the hearts of these characters and the performance. It's a different way of getting direction from an animation director and it's the right way, helping them dig a little bit deeper."

While stop-motion requires from the animator fortitude, single-mindedness and the ability to work methodically, ultimately, as with all forms of animation, what drives these artists to spend long days in the dark, manipulating puppets,

opposite: Lead animator Brian Herman positions Victor. above: Victor thinking (heavily animated) Sparky and Victor in the bedroom set.

Sparky. And I think that's central to all of Tim's films — misunderstood main characters. They have all these decorations of horror and macabre, but they're always charming, heartwarming central characters who are outsiders and a little misunderstood." Burton was insistent, too, that the relationships between Victor and the other characters also felt real. "All these relationships that Victor has are real, and are ones that everyone can identify with, be it in his class, with the politics and rivalries, with his parents and with his dog."

Even with Edgar, Victor's hunchbacked classmate, Thomas says the plan was for the animators to treat him as realistically as possible. "He's got to be Igor from *Frankenstein*, twisted and a little malformed, but he also has to be a kid, so how do you find that line? He is a little clobbery and does favor one eye, and he's got one big hand, but you want to identify with him because deep down he's charming too. A lot of it came from Tim's drawings. When you look at that puppet you can see he's got that hunch, and he's going to have to counterweight that, and he's got one twisted little foot and one giant hand, so Tim describes the parameters and we experiment, and then he tells us what works and what doesn't and we go that direction. Tim had very specific ideas about what Edgar's eyes do, so we had to refine how he squints. Eye direction and eye movement is a huge thing for acting, because you're always looking at characters' eyes and we manipulate them constantly. It was a constant process of what works for Tim and trying to give him that."

Another challenge for Thomas and the animators was Burton's insistence on a live-action style of composition, which translated into "extremely challenging, large shots. Tim wants more of a movie movie," notes Thomas. "Again that had to do with not getting too cartoony and overly bouncing around," says Burton, "the way some animation is overanimated."

Because of the extreme nature of some of the character designs, a number of the puppets were unable to move or even stand without help, including Sparky. "He cannot support himself, because he's such a beefy little guy with tiny little feet, so he's always on a rig," says Thomas. The rigs are later removed in post-production, thereby giving Sparky the appearance of moving unaided. For large sequences involving multiple puppets, of which there are many in *Frankenweenie*, a single animator would be required to manipulate them all — on his own. "If there's 25 characters in one shot, it's still one animator," reveals Abbate. "Each character has to move differently, they even have to blink at different times. If they're in the classroom and they all raise their hands, everything is done separately. Often people ask me, 'What are the computers doing?' and I'm like, 'They're not doing anything.' It's a man behind a black curtain, moving a puppet one frame at a time."

Animators at work: opposite (clockwise from top left): Tobias Fouracre, Chuck Duke, Andrew Gordon Bonczyk and Anna Wolf; this page (clockwise from top left): Marisa Ledwell, Dominic Tavano, Mark Waring

BLACK, WHITE & LIGHT

From the word go, Burton was determined that *Frankenweenie* be in black and white, as had been the case with the live-action short. "We all thought it would be a hard sell for the studio," says executive producer Don Hahn, "but Tim is so passionate about the idea of tipping our hat to the great monster movies and creating something really unique, that shooting it in black and white was a big part of his vision for it."

"I remember saying to the studio and I meant it, 'This has to be in black and white because it's going to be more emotional, it's going to be different and it's going to make it better,'" recalls Burton. "If this was to be in color, it wouldn't be as good. There's a reality to black and white. I always try to treat 'color' as part of the story. It's like another character. You wouldn't want to take it out because it's like taking out a major character. And there's something very pleasing about seeing this style of animation that way, a certain depth and the way things go in and out of shadows."

"Tim's always said black and white makes it more emotional," says producer Abbate. "By taking the color out you're left with the emotional resonance of what's going on in the scene, so you can follow the characters and the story. Adult audiences will understand the homages to old movies, while for kids it's a fresh way to tell a story. They'll relate to the cool graphic images, and in fact I feel like we're getting to the heart of our story quicker. Also, in a marketplace where animated movies are so colorful, it will be very unique looking. Your eye will be drawn to these images that are so beautiful and rich and detailed, but stark and emotional at the same time."

The man responsible for implementing Burton's black-and-white vision is Pete Sorg, who worked as a lighting cameraman on *Corpse Bride* and *Coraline* and is making his debut as a director of photography with *Frankenweenie*. As with so much to do with *Frankenweenie*, Burton's mantra was keep it real. "The first thing Tim said to me was this film is going to be very sensitive, it's going to be emotional and the lighting has to bring that across as well," Sorg recalls. "He wanted the film to be realistic looking, not like a puppet-cartoon movie, to be cinematic. We've got to play with the black and whiteness, we've got to find out what is black and white, how far to push the blacks and the whites and the textures."

Once again, old horror movies were a major source of inspiration, as well as German Expressionist cinema of the 1920s and '30s and Burton's own drawings. "The most effective attribute of old horror movies like *Frankenstein* is the use of shadow and light, and just the way you can instantly see one frame and know it's a horror movie, even if you're not looking at the laboratory sequence," says Abbate. "Looking at *Frankenstein*, *Bride of Frankenstein*, *Young Frankenstein* and the other Frankenstein movies was great reference for us. We are all so familiar with those iconic images that it's almost like you remember the collective of all the Frankensteins you've seen over the years."

While Sorg did his due diligence, watching a host of old horror movies as research, he says they ultimately went away from that specific style. "I got really into them, but in terms of lighting and reference it's quite a different look we've got, compared to those old pictures. They had different equipment then, and were much more broader lit. Ours is more detailed and emotional, so they were a starting point, but we didn't stay there. Our starting point was always the classic monster uplight. We've got that quite a bit, and harsh backlights in different sequences."

The key to "emotional," says Sorg, was shadows. "It's tricky. Placing shadows is very important, and how deep you go with the shadows and what you let

disappear into the shadows, or how much things creep out from the shadows. We've got beautiful sets and beautiful props and the temptation is to light up so you can see everything, but you shouldn't. It's all about what you show and what you don't show in a given scene, and if it's a sad one you let it go darker toward the edges and show a bit less with the side of the face lit up and the shadows a bit deeper."

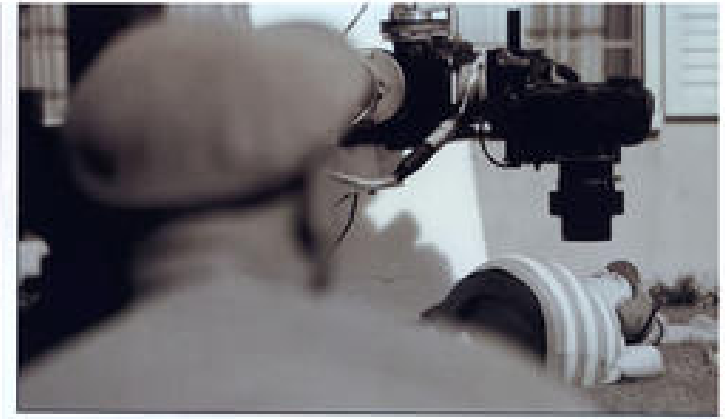
"The shadows are beautiful," says Burton. "That's the thing about this style of animation, no matter how great CG is, the shadows are different. They're real. They're there. They're much more present to me. Pete did a brilliant job of that kind of horror-movie photography. I was so happy."

But the lighting style wasn't without drawbacks, particularly for the animators. "It can make their life difficult because it is so specialized and there are so many tiny sources," muses animation director Trey Thomas. "The black and white shows up every little flaw and is both a curse and the coolest thing ever. But it's really what's going to set this movie apart. It's so rich and makes this movie so classic. It's such a different animal and a unique approach."

In stop-motion every shot is carefully planned. Working from the storyboard, Sorg, together with Thomas, breaks down each shot in detail. "We block a whole sequence to get the best camera angles and see what is needed — how much extra sets or backgrounds we need," he says. "That's when we find out we might have a move here, or a move there, or a pull out would make it more cinematic. Once that gets locked, it goes into the system for everyone to see, because everything has to be worked out very carefully to make sure we've got enough equipment available because it's all motion-controlled. It all takes a long time to set up. Every little camera move, depending on the complexity, can add between two hours to two days to the setup time. Then we start lighting a wide shot to establish a whole look. Once we've found that, we know the close-ups and everything else has to fit in this world."

Because there can be up to 30 units animating at any one time, Sorg works with several lighting cameramen, distributing sequences among them. Each cameraman takes responsibility for between five to eight units. "They're kind of DoPs in their own right," explains Sorg, "but I try to keep them within one sequence, so I've got consistency within that sequence. I try and find out what they like, what they're best at, if they're good at exterior sets or more interiors. I give them all the footage we've shot so far and the tests and reference material, and then we take it from there. Once we set everything and all the lights have been set and all the flickers have been programmed, the lighting cameraman is the boss of this unit and is in control of that. Once it's all set, they leave the animator to it. My role becomes to see it all matches up and is all good quality and looks the best it can. Sometimes I suggest different camera angles or to place the light slightly different to get different shadows. If there's a problem, if a lightbulb's blown during a shot or equipment's not working, they go back in, but that's the only time."

As with *Corpse Bride*, *Frankenweenie* was shot with digital SLR cameras, in this case the Canon 5D Mark II, using a series of mainly old, manual Nikon



previous spread: Director of photography Pete Sorg lines up a shot. opposite (top): Camera assistant Bjoern Ulrich has Bob in his sights. (bottom): Edgar gets ready for his close-up. this page: (clockwise from top left): Gaffer Toby Farrar primes a light; Bob gets his close-up; Tsuchiaki waits while Mark Swinfield (right) and Tom Piercy prepare for a motion-control shot.

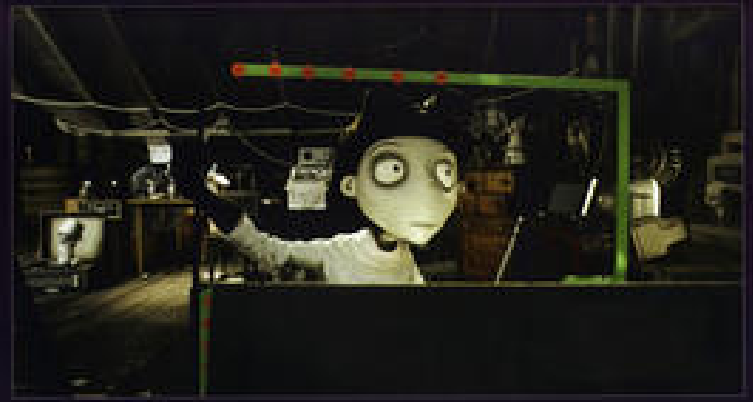
lenses. "We found some on eBay because they're difficult to come by," notes Sorg. But while the film will be shown in black and white, the images were recorded in color. "Because it was shot digitally, we wanted to capture as much information as possible, using all the color channels — red, green and blue — to capture our images, just because we wanted to have the most latitude, most information," Sorg continues. "So we light in color, but don't really care about colors. When I'm lighting, I don't put any gels on it or make it look pretty, because I know all the color is going to be sucked out afterward. So the color palette is all over the place and looks very strange if you look at the picture bare."

As the very successful post-conversion of *The Nightmare Before Christmas* proved, stop-motion is very effective in 3D. Moreover, during the stereoscopic format 1950s' heyday, myriad monster movies were filmed that way. "Because it is such an homage to some of the old monster movies, it is fun to do it in 3D," says Abbate. "And the fact that it's in black and white is something special too. I think having it in 3D will really pull the audience into this world that we created. A stop-motion set is kind of like a diorama anyway, so we will literally be inviting the audience into our dollhouse."

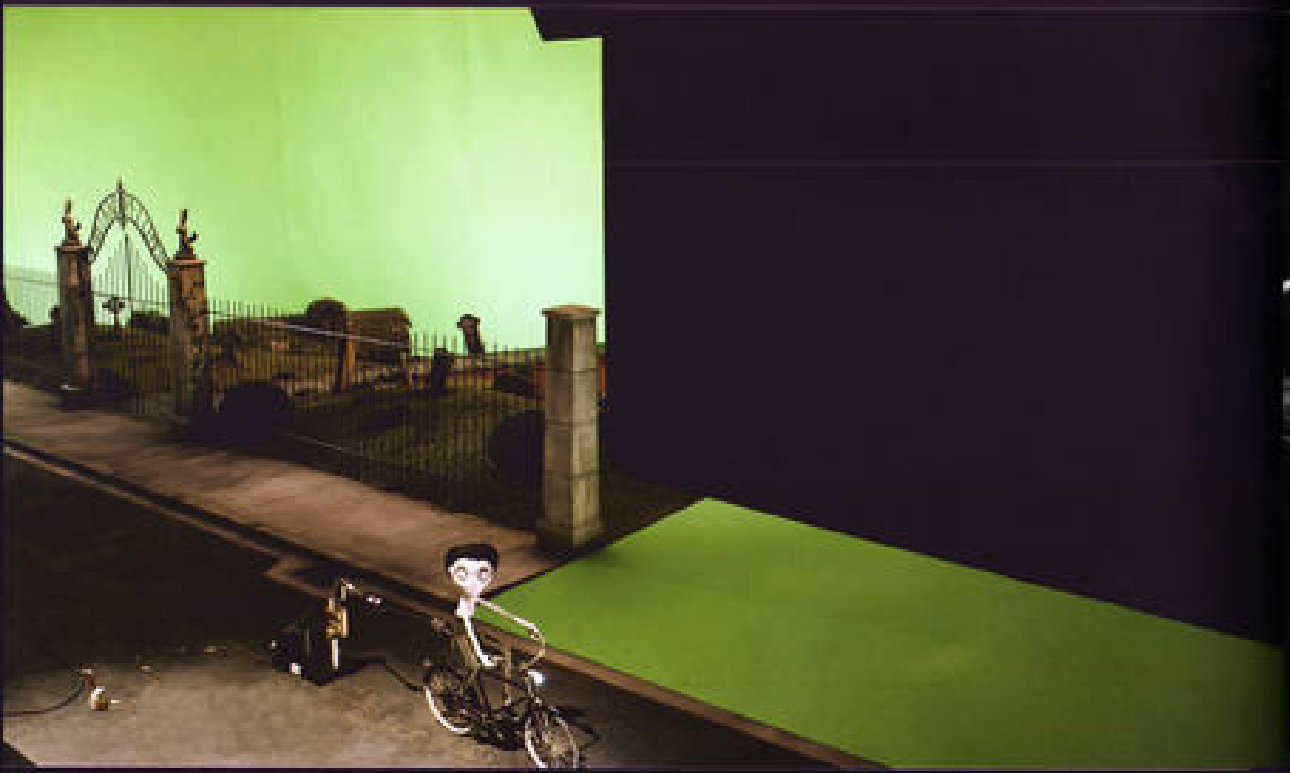
"The idea of doing black-and-white 3D is very, very exciting," says Burton. "The images are very crisp, and then with 3D element, gives it a certain kind of depth, which is unusual and amazing. When *Nightmare* was transformed into 3D, I thought this is the way it should be for stop-motion. I mean, it's the closest thing to walking on the set of a stop-motion animated film. Seeing what the artists have done, really feeling those textures and the dimensional quality is part of the excitement of it."

While Sorg didn't shoot *Frankenweenie* in 3D — "it makes life on the studio floor a lot easier. You can move a lot quicker" — decisions were made from the storyboard stage right through to the actual animation as to how best to incorporate stereoscopic effects into the movie. "We tried to design things that might look interesting or would maximize a certain environment to get the most out of the 3D," explains Abbate. "Certainly, while we were setting up or breaking down shots or shooting on the floor, if we needed to put something on a separate level or a green screen behind it, just to give them that extra capacity later, we did. So we were always cognizant of it."

Burton and his longtime editor Chris Lebenzon work on a scene for Frankenweenie.



Inset: Victor in his attic laboratory. Above: The same shot, with the image now converted to black and white and the fish tank added in via visual effects.



New Holland Volkslied

Music and Lyrics by Danny Elfman

Alle Int. New Holland! Uw Straten zo breed.

Uw Twe- ten zo schoon. Bachelder vermogen.

heuch- elden pri-vem Ver- lig van al ondo- ugden

Alle Int. New Holland! Uw Straten zo breed.

Uw Twe- ten zo schoon. Bachelder vermogen.

heuch- elden pri-vem Ver- lig van al ondo- ugden

Alle Int. New Holland! Uw Straten zo breed.

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Nova Holland Volkslied 1961. International Copyright Secured.

to *Citizen Kane* was lush and rich and a full orchestra because it was also black and white. I've been asked that a couple of times, because of that quote: 'Are you thinking of just doing strings like Bernard Herrmann did for *Psycho*?' No, the story is the story and the narrative as it's being told, musically, doesn't change substantially color or black and white."

Elfman's main title music is always very memorable and tends to be one of the first things he'll work on. "Very often in Tim's films the titles are going to be making a tonal statement about what the movie's going to be and it's really important to get that right," he states. "These titles are slightly deceptive because they'll be very simple. They're not going to tell us it's a horror film. It's not going to tell us 'Sparky's going to die and get reanimated. It's not going to tell us much. Whereas a movie like *Beetlejuice*, I was very consciously telegraphing, "You're not going to meet this character for another 40, 45 minutes, but I'm going to let you know who he is, right now, in the titles, so you won't be surprised when you see him."

"Here we're going to go the opposite direction. Not really tell too much of what's going to happen in the titles. Keep it pretty simple. In a lot of horror films, if you're starting with one of the characters, and you're meeting one of them, as we are here, you're not really starting with the horror piece of music, you're just following an element of the story. You know that something's going to happen, and you're just going to have to wait for that."

Nassor and his mummified pet, Colossus. "I had this idea of a little hamster that doesn't really do much," says Burton.

The Sea Monsters attack. "You can't really kill 'em," says Burton.

Sparky and the Vampire Cat face off in the burning windmill.

Love at first bark — Sparky and Persephone.

THE FINAL STITCHES

For Burton, as well as the many hundreds of people involved in its production, *Frankenweenie* represents something very special indeed.

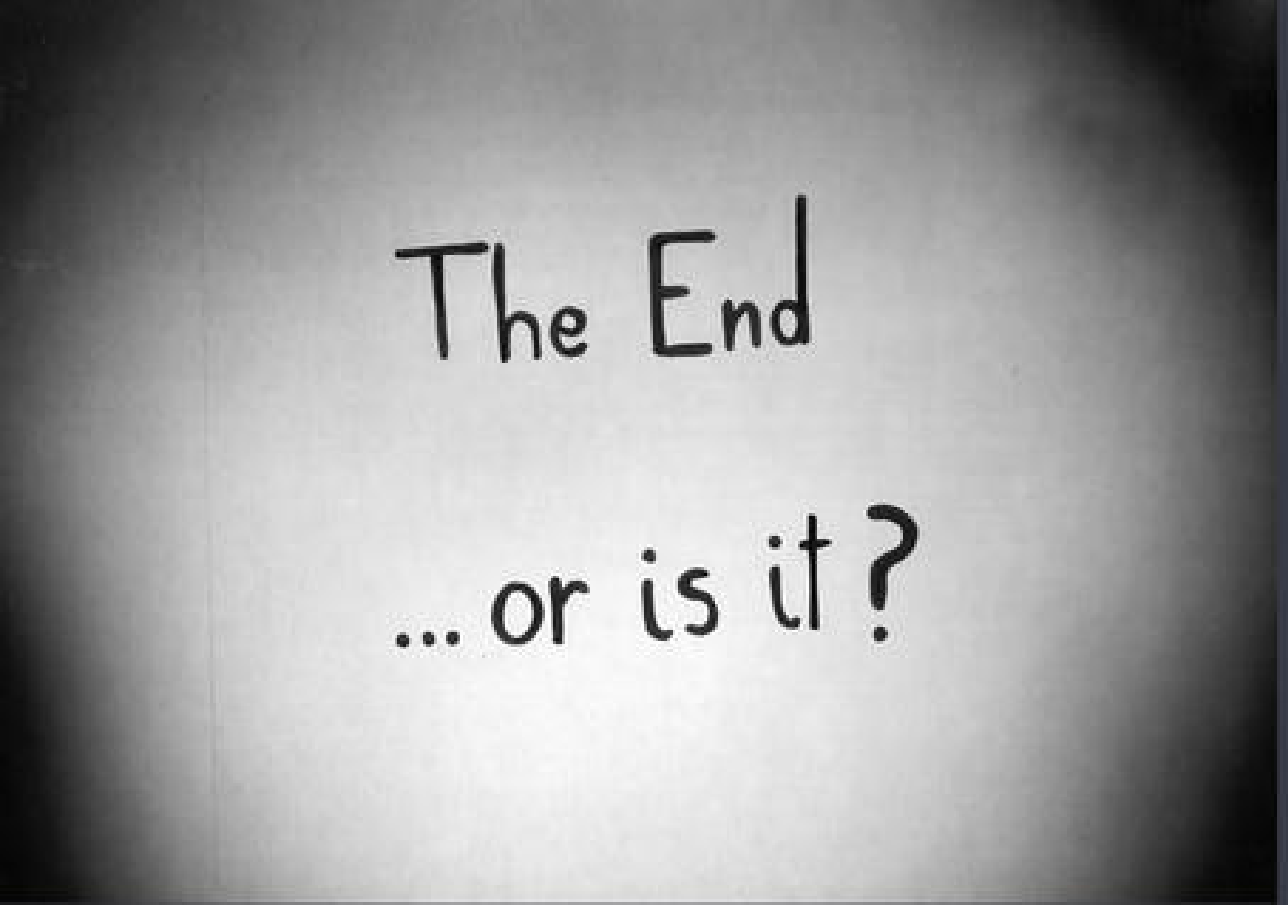
"When you go to the movie theater, you don't see the sweat and blood and labor and late nights that go into the making of a movie like this; you just get swept away in the story of a boy and his dog, and the love they feel for each other," muses executive producer Don Hahn. "And it's a great story, a great Tim Burton story, set against a very normal, everyday suburban town where something extraordinary happens. And that's Tim's gift. He does those stories better than anybody."

"*Frankenweenie*, the original, is really a character study of the people that surrounded Tim, the environment and what it was like growing up in '60s suburbia: all the different characters that you meet," recalls production designer Rick Heinrichs. "And we've still got that, but now it's developed in a much more cohesive and broad way, and with a lot more interest in the school particularly, so you really see what the world is like with the kids."

Nearly three decades on from Sparky's original resurrection, *Frankenweenie* marks the first time Burton has directed an animated feature for the studio that gave him his start. Working with a team of both old and new faces, things really have come full circle. "It's an amazing convergence of timing, technology and the perfect team to realize this vision that has been kicking around in Tim's head for the last 30 years. I am so proud of the movie we have brought to life," says Abbate.

"Like so many of us, Tim loved Walt Disney movies when he was growing up, so much so that he went to CalArts and studied animation there," says Hahn. "At that time, the company was at a crossroads. They either had to pass the baton to these kids or wait a minute. And the studio balked for a minute. So people like John Lasseter and Tim took off and had careers and went in their own directions. Tim's career has been spectacular. And now for him to come back to Disney and dust off this truly amazing story, and turn it into what I believe will be another classic, is extraordinary. It speaks to the legacy of Disney that Tim has come back for this film."

"I'm excited about this," concludes Burton, "revisiting something that meant a lot to me, trying to capture the spirit of the drawings, doing it stop-motion, in black and white, and in 3D; all those elements together make it a new creation."


The End
...or is it?